M-203

AEP Model
UK Model
E Model
US Model
Canadian Model

MICRO CASSETTE-CORDER

SPECIFICATIONS

Power Requirements: 3 V dc, two batteries size AA (IEC designation R6), or optional Sony Rechargeable Battery Pack BP-33
120 V ac, 60 Hz with optional Sony AC Power Adaptor AC-31 (US, Canadian model)
220 V ac, 50 Hz with optional AC Power Adaptor AC-35 (AEP model)
220/240 V ac, 50 Hz with optional AC Power Adaptor AC-35 (UK model)
110, 120, 220 or 240 V ac, 50/60 Hz with optional AC Power Adaptor AC-32 (E model)
12 V car battery with optional Sony Car Battery Cord DCC-127A

Power Consumption: 5 W ac (60 Hz) with Sony AC Power Adaptor AC-31 (US, Canadian model)
7 W ac at 50 Hz with AC Power Adaptor AC-35 (220 V ac) (AEP model)
2 W ac at 50 Hz with AC Power Adaptor AC-35 (220/240 V ac) (UK model)
6.6 W ac at 50 Hz, 6.2 W ac at 60 Hz with AC Power Adaptor AC-32 (E model)

Dimensions: Approx. 65 (w) x 150 (h) x 28 (d) mm
2 5/8 (w) x 5 7/8 (h) x 1 1/8 (d) inches
including projecting parts and controls

Weight: Approx. 290 g, 10¼ oz including batteries

Power Output: 200 mW (at 10 % harmonic distortion)

Speaker: Approx. 5 cm (1 7/8 inches) dia

Recording System: 2-track 1-channel monaural

Tape Speed: 2.4 cm/sec (15/16 ips), 1.2 cm/sec (15/32 ips)

Fast Winding Time: Approx. 2 min. with Sony Microcassette MC-60 (at 2.4 cm position)
Approx. 4 min. with MC-60 (at 1.2 cm position)

Frequency Response: 200 – 6,000 Hz (at 2.4 cm position)
200 – 4,000 Hz (at 1.2 cm position)

Battery Life: Continuous recording hours:
Approx. 3.5 hours with Sony Super Batteries SUM-3S
Approx. 4 hours with Eveready Heavy Duty Batteries No. 1215
Approx. 10 hours with Sony Alkaline Batteries AM-3 or Eveready Alkaline Batteries No. E91

Input: Microphone input jack (minijack)
sensitivity 0.2 mV (–72 dB)
for low impedance microphone

Output: Earphone jack (minijack)
for 8 Ω earphone or load impedance 10 kΩ or higher

0 dB = 0.775 V

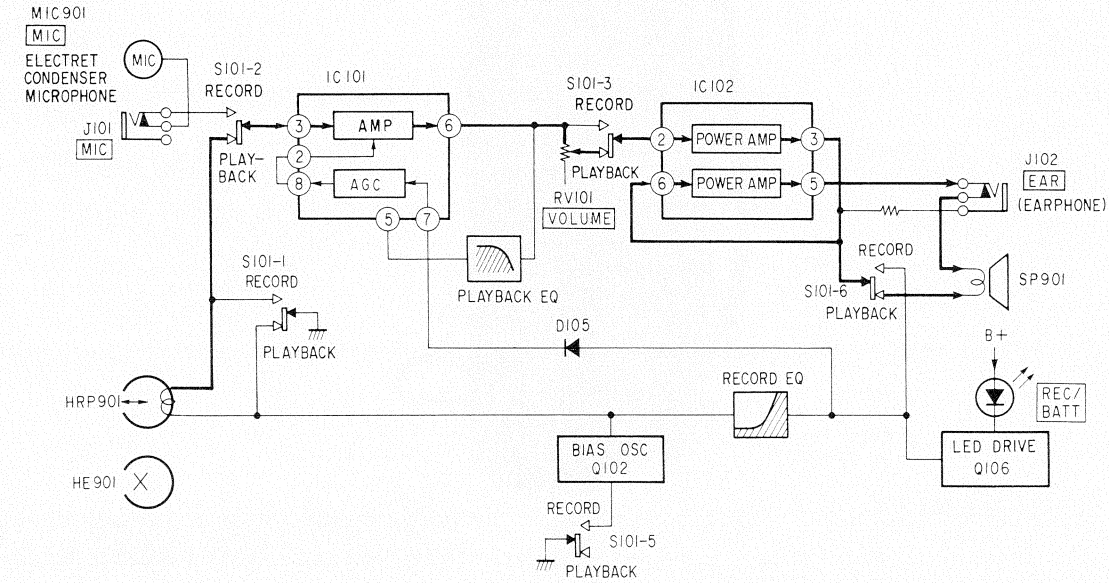
	Specification	Test Equipment
Forward Torque	5 – 10 g·cm (0.07 – 0.13 oz·inch)	Sony torque meter CQ-103M
Fast Forward Torque Rewind Torque	more than 15 g·cm (more than 0.21 oz·inch)	Sony torque meter CQ-201M
Pinch Roller Pressure	160 – 200 g·cm (6 – 7 oz)	spring scale or tension gauge

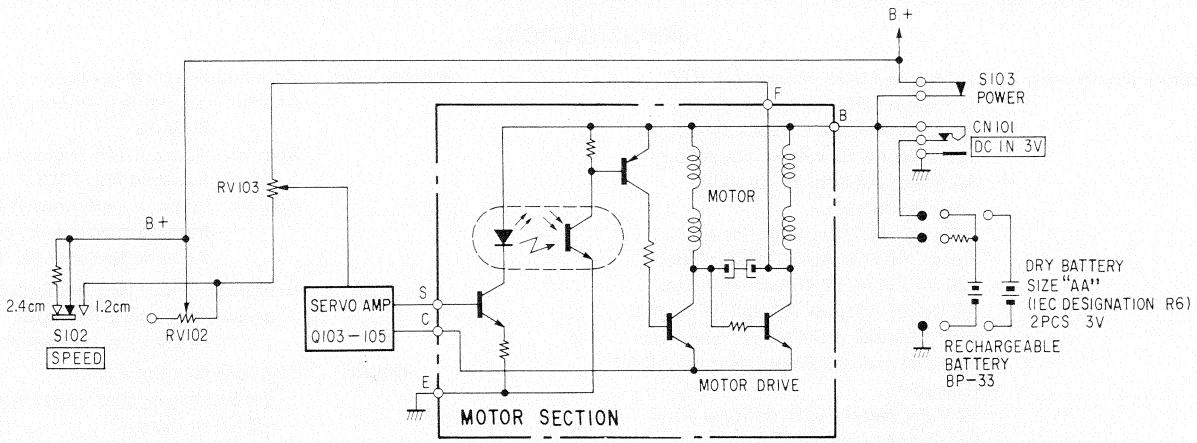
Note: The values specified should be obtained at both 1.2cm/s and 2.4cm/s.

SONY®
SERVICE MANUAL

SECTION 1
OUTLINE

1-1. BLOCK DIAGRAM





1-2. CIRCUIT OPERATION

BSL DC Servo Motor

This set is equipped with the newly-developed BSL (Brush and Slotless) DC servo motor.
This motor has the following advantages:

- Constant torque
- Extremely low noise, because of the electrical (non-mechanical) switchover.
- Stable performance and long durability.

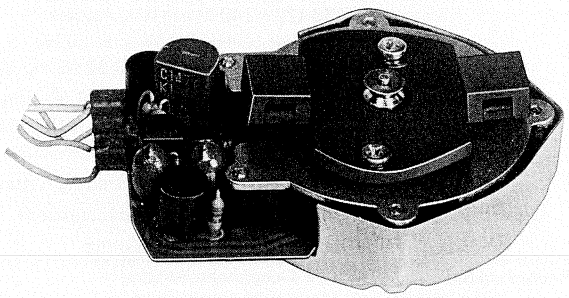


Fig. 1 BSL DC Servo Motor

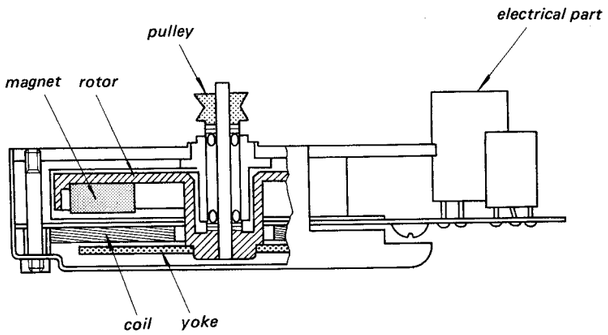


Fig. 2 Sectional View of the Motor

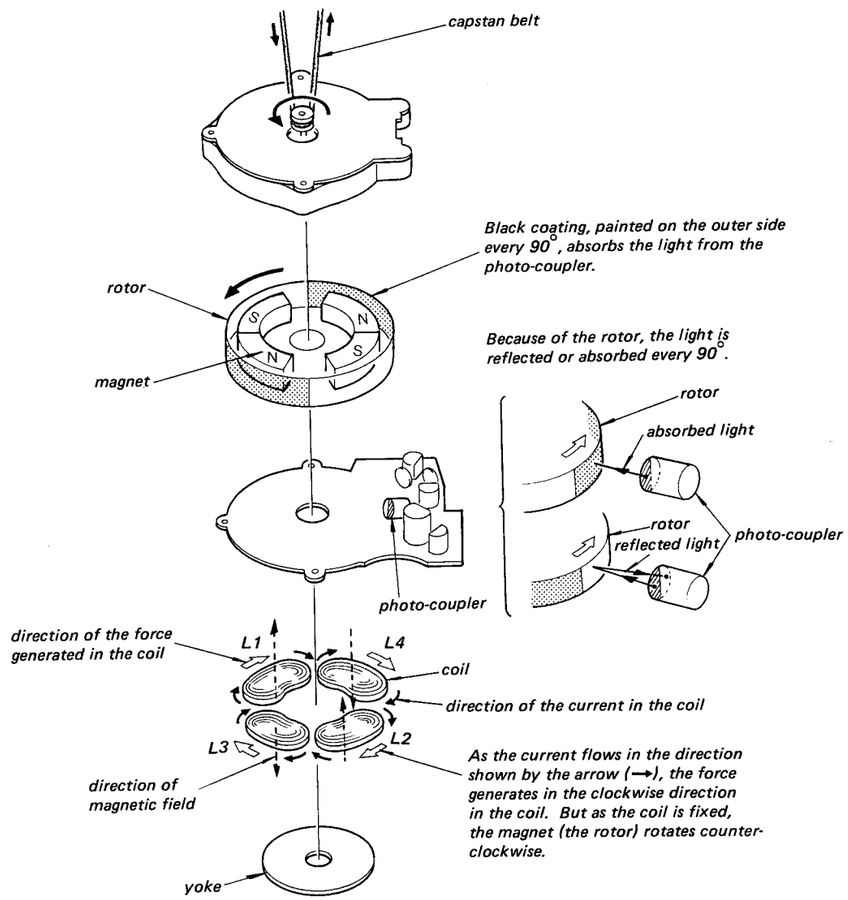

capstan belt
Black coating, painted on the outer side every 90°, absorbs the light from the photo-coupler.
rotor
magnet
Because of the rotor, the light is reflected or absorbed every 90°.
rotor
absorbed light
rotor
reflected light
photo-coupler
photo-coupler
direction of the force generated in the coil
L1
L4
coil
direction of the current in the coil
L3
L2
direction of magnetic field
As the current flows in the direction shown by the arrow (→), the force generates in the clockwise direction in the coil. But as the coil is fixed, the magnet (the rotor) rotates counter-clockwise.
yoke

Fig. 3 Mechanism of the Motor

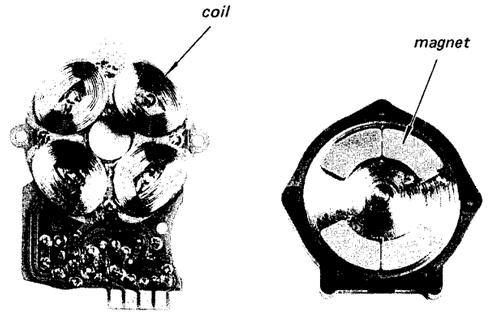


Fig. 4 Internal View of Motor

Generation of Rotational Force

According to the Fleming's left-hand rule, the force generated in the motor coil is in the clockwise direction (See Fig. 3), but since the coils are fixed so that the magnet (rotor) rotates counterclockwise (See Fig. 3).

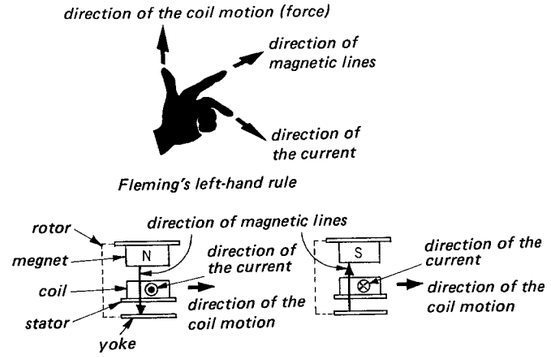


Fig. 5

Photo-coupler

Photo-coupler is a conversion device which consists of a luminous part and a light-sensitive part.
The electrical input is converted into a light at the luminous part and is converted back into an electric signal at the light-sensitive part.
This photo-coupler has the following advantages.

- The input side and the output side are electrically isolated. The insulation resistance value between the input and the output sides is $10^{11} - 10^{12}\Omega$, and the capacitance value is 0.5 – 2pF.
- The photo-coupler is equivalent to the no-contact point relay (switch).
- The noise from the input side does not influence the output side.
- A change of current can be detected without touching the input side.
- The photo-coupler with the same B+ voltage as the other semiconductors.
- The temperature variation of the current conductivity is small. This is because the temperature coefficient of the current amplitude ratio and the luminous efficiency are opposite and compensate each other.

Motor Drive Circuit (See Fig. 6)

This set employs a photo-coupler as the switching element for Q4 and Q5 (motor-coil drive).

1. D1: the light-emitting diode of the luminous parts.
   D2: the photo transistor of the light-sensitive parts.
2. The reflected light Ⓐ → Q2, base→ Q2: ON; a current flows.→ Q3 : ON
3. Q3 : ON→ Q4 : ON→ The current flows through L1, L2.
4. The electric current flowing through L1, L2
   The magnetic field
   →The electromagnetic force is generated.
   →The rotor rotates in the direction shown by the arrow (See Fig. 3).
5. When the light is absorbed by the rotor:
   Q3, OFF→ Q4, OFF→ Q5, ON
   →The current flows through L3, L4
   →The rotor rotates in the direction shown by the arrow (See Fig. 3).
6. Thus the rotor is driven by the photo-coupler, which applies current alternately to L1, L2 and L3, L4.

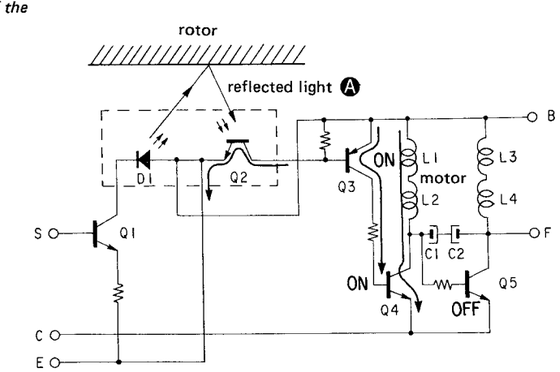


Fig. 6

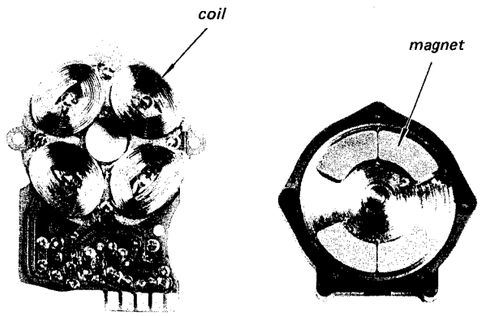


Fig. 4 Internal View of Motor

Generation of Rotational Force

According to the Fleming's left-hand rule, the force generated in the motor coil is in the clockwise direction (See Fig. 3), but since the coils are fixed so that the magnet (rotor) rotates counterclockwise (See Fig. 3).

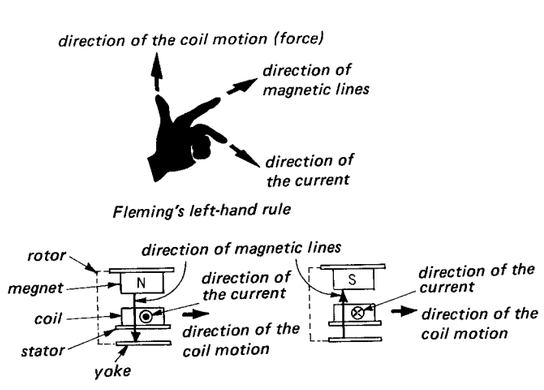


Fig. 5

Photo-coupler

Photo-coupler is a conversion device which consists of a luminous part and a light-sensitive part.
The electrical input is converted into a light at the luminous part and is converted back into an electric signal at the light-sensitive part.
This photo-coupler has the following advantages.

- The input side and the output side are electrically isolated. The insulation resistance value between the input and the output sides is $10^{11} - 10^{12}\Omega$, and the capacitance value is 0.5 – 2pF.
- The photo-coupler is equivalent to the no-contact point relay (switch).
- The noise from the input side does not influence the output side.
- A change of current can be detected without touching the input side.
- The photo-coupler with the same B+ voltage as the other semiconductors.
- The temperature variation of the current conductivity is small. This is because the temperature coefficient of the current amplitude ratio and the luminous efficiency are opposite and compensate each other.

Motor Drive Circuit (See Fig. 6)

This set employs a photo-coupler as the switching element for Q4 and Q5 (motor-coil drive).

1. D1: the light-emitting diode of the luminous parts.
   D2: the photo transistor of the light-sensitive parts.
2. The reflected light Ⓐ → Q2, base → Q2: ON; a current flows. → Q3 : ON
3. Q3 : ON → Q4 : ON → The current flows through L1, L2.
4. The electric current flowing through L1, L2
   The magnetic field
   → The electromagnetic force is generated.
   → The rotor rotates in the direction shown by the arrow (See Fig. 3).
5. When the light is absorbed by the rotor:
   Q3, OFF → Q4, OFF → Q5, ON
   → The current flows through L3, L4
   → The rotor rotates in the direction shown by the arrow (See Fig. 3).
6. Thus the rotor is driven by the photo-coupler, which applies current alternately to L1, L2 and L3, L4.

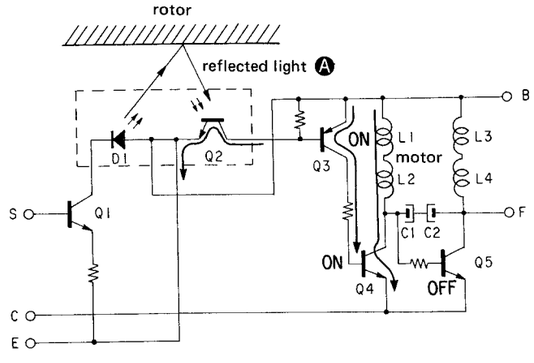


Fig. 6

Servo Control Circuit (See Fig. 7)

When the motor speed increases or decreases compared to the specified value, the servo circuit operates and the speed returns to the specified value.

1. Motor rotates. → Voltage is generated at point Ⓐ in proportion to the motor speed.
   Here, C1 and C2 charges the induced voltage from L1, L2 and L3, L4. Thus, the back-pulse is eliminated when Q4 and Q5 turn off.
2. Motor speed drops. → Voltage at point Ⓐ drops.
   → Q105, collector; voltage drops.
   → Q104, collector; voltage rises.
   → Voltage at point Ⓑ drops.
   → The current flowing through L1 – L4 increases.
   → The motor speed increases to its specified speed.
3. When the motor speed increases, the opposite process is followed and the motor speed reduces to its specified speed.

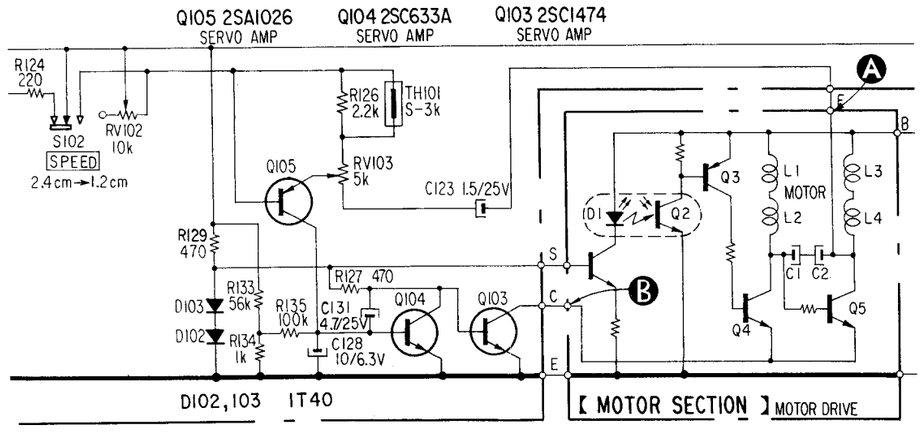


Fig. 7

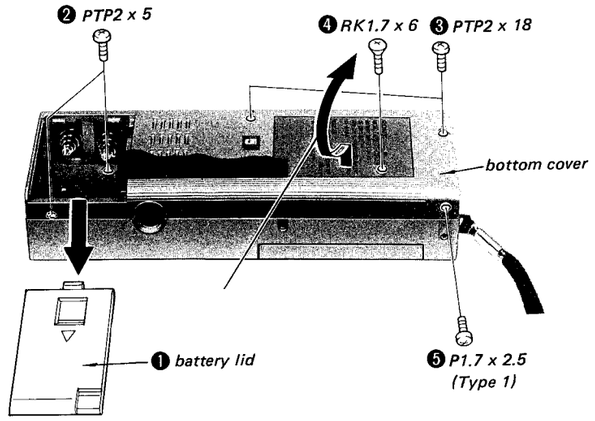
M-203 M-203

SECTION 2
DISASSEMBLY

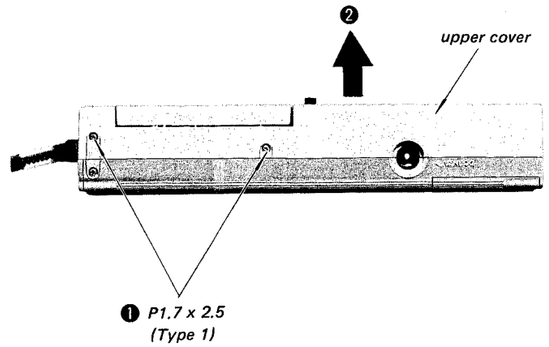
- Follow the disassembly procedure in the numerical order given.

MOTOR SECTION REMOVAL
FLYWHEEL REMOVAL
} See the page 8.

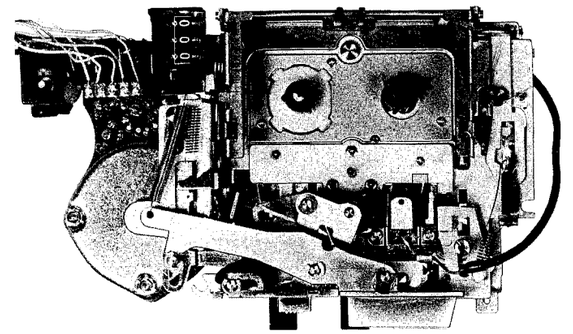
BOTTOM COVER REMOVAL



UPPER COVER REMOVAL



INNER (UPPER) SIDE OF THE MECHANICAL SECTION



CASSETTE LID REMOVAL

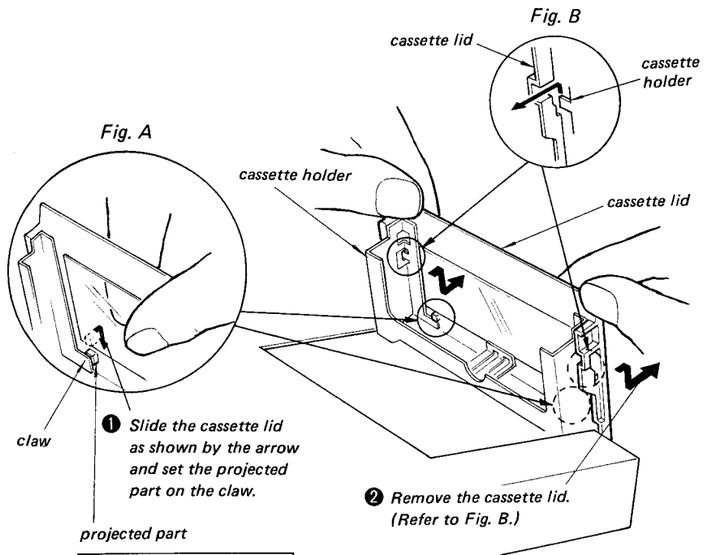
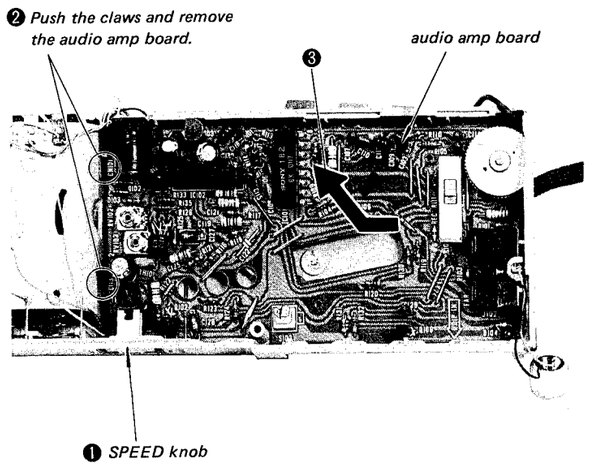


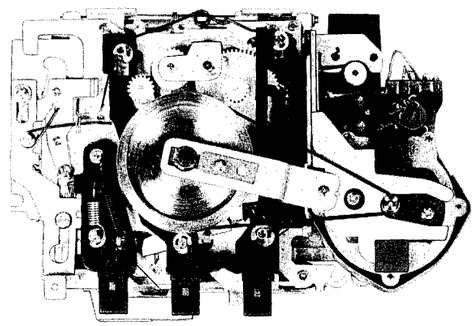
Fig. B
cassette lid
cassette holder
Fig. A
cassette holder
cassette lid
claw
❶ Slide the cassette lid as shown by the arrow and set the projected part on the claw.
projected part
❷ Remove the cassette lid. (Refer to Fig. B.)

Caution: *Do not damage the projected part.*

AUDIO AMP BOARD REMOVAL

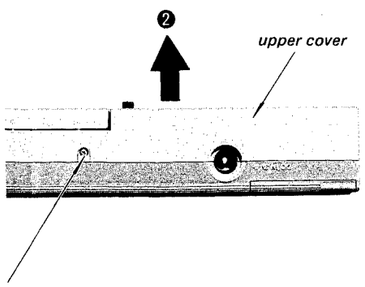


INNER (BOTTOM) SIDE OF THE MECHANICAL SECTION



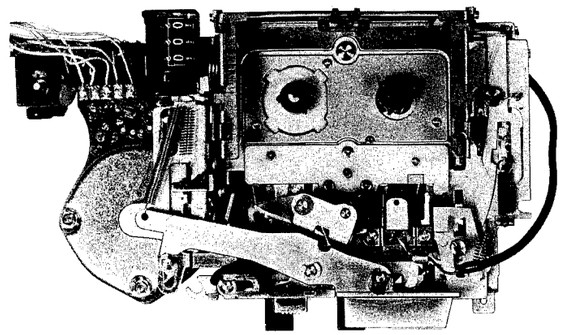
MOVAL
L
See the page 8.

OVAL

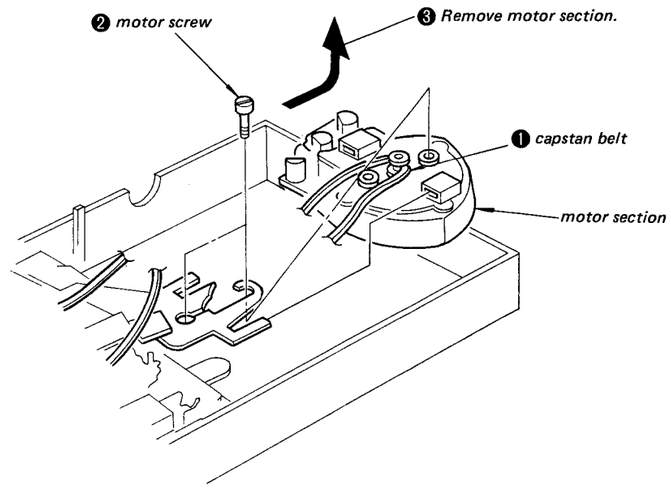


‹ 2.5
› 1)

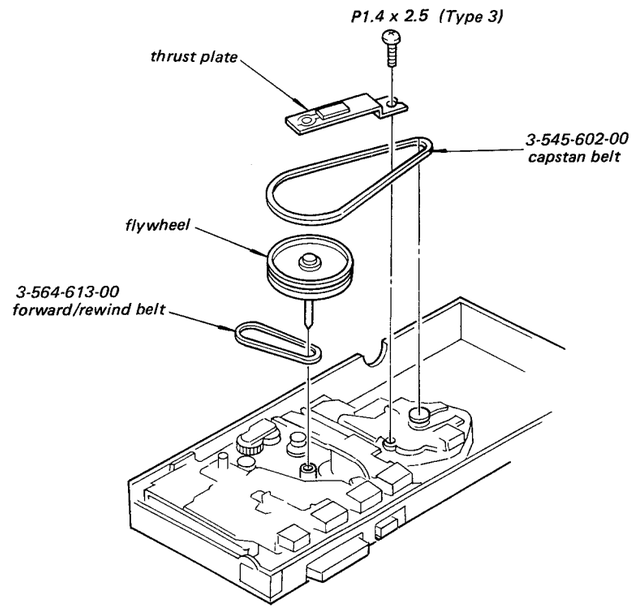
INNER (UPPER) SIDE OF THE MECHANICAL SECTION



MOTOR SECTION REMOVAL

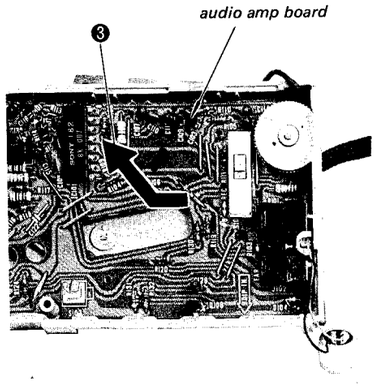


FLYWHEEL REMOVAL

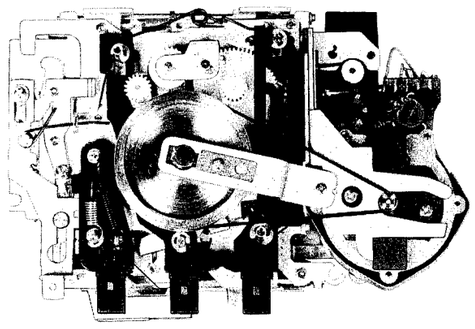


EMOVAL

ve



INNER (BOTTOM) SIDE OF THE MECHANICAL SECTION



SECTION 3
ADJUSTMENTS

3-1. MECHANICAL ADJUSTMENT

PRECAUTION

1. Clean the following parts with a denatured-alcohol-moistened swab:

record/playback head	pinch roller
erase head	rubber belts
capstan	idlers

2. Demagnetize the record/playback head with a head demagnetizer. (Do not bring the head demagnetizer close to the erase head.)
3. Do not use a magnetized screwdriver for the adjustments.
4. After the adjustments, apply suitable locking compound to the parts adjusted.
5. The adjustments should be performed with the rated power supply voltage unless otherwise noted.

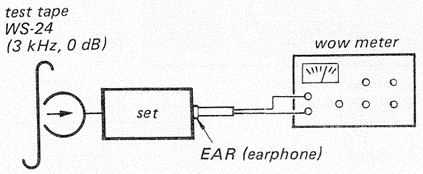
Wow and Flutter Measurement

Setting:

Power supply voltage:	3V dc
VOLUME control:	Set for the adequate input level of the wow meter.
SPEED switch:	2.4cm

Procedure:

Mode: playback



Specification: less than 0.6% (RMS)

3-2. ELECTRICAL ADJUSTMENTS

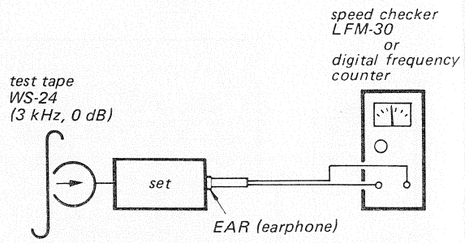
Tape Speed Adjustment

Setting:

VOLUME control: mechanical mid

Procedure:

Mode: playback

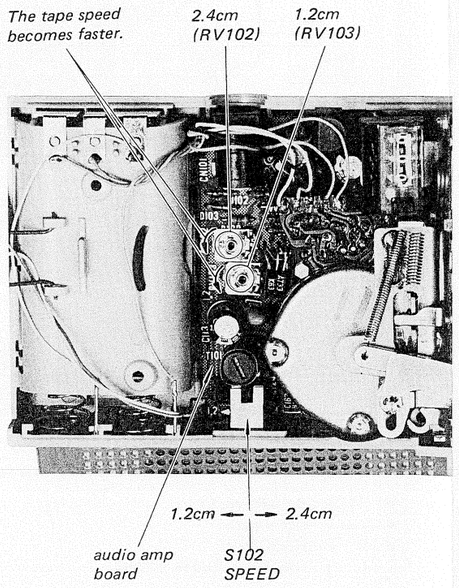


Specification:

Speed checker	Digital frequency counter
–3 – +3%	2910–3090Hz (2.4cm) 1455–1545Hz (1.2cm)

Adjust RV102 for 3000Hz at tape speed 2.4cm. Next, adjust RV103 for 1500Hz at tape speed 1.2cm.

Adjustment Location:



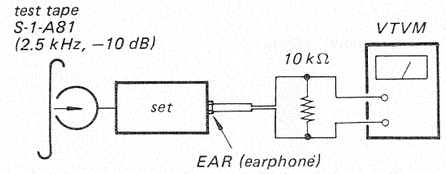
Record/playback Head Azimuth Adjustment

Setting:

VOLUME control: mechanical mid

Procedure:

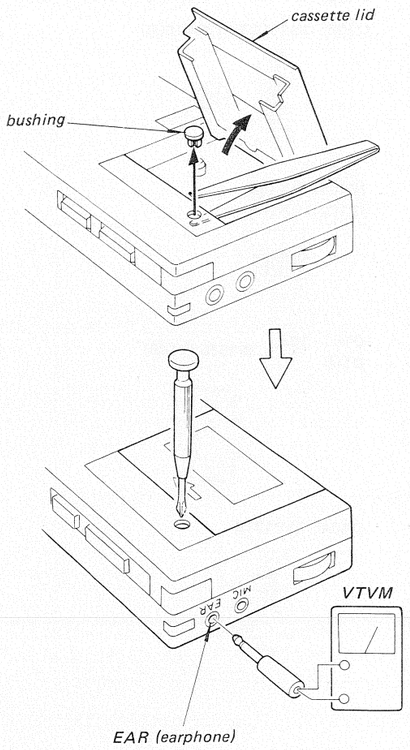
1. Remove the bushing as shown below.
2. Mode: playback



3. Turn the adjustment screw for maximum VTVM reading.

Note: Several peaks may appear, but take the maximum.

Adjustment Location:

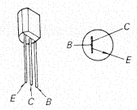


SECTION 4
DIAGRAMS

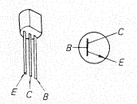
4-1. MOUNTING DIAGRAM
– Conductor Side –

- **Replacement Semiconductors**
  For replacement, use semiconductors except in ( ).

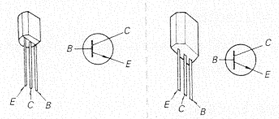
Q102, 106: 2SC1310



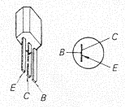
Q103: 2SC1474



Q104: 2SC1310 **(2SC633A)**

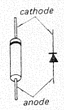


Q105: 2SA1027R (2SA1026)

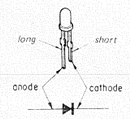


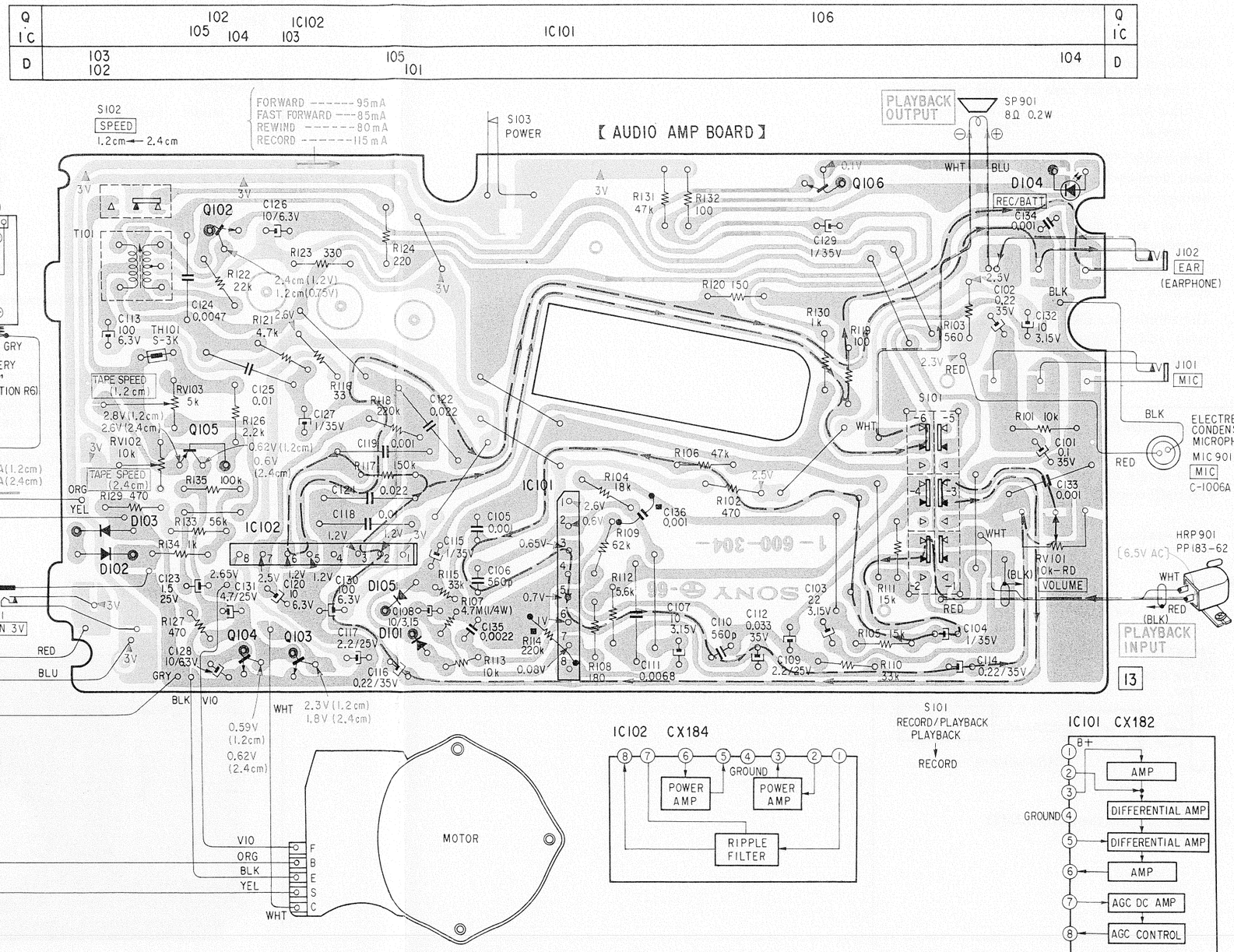
IC101: CX182
IC102: CX184

D101–103, D105: 1S1555 (1T40)



D104: SLP131B





【MOTOR SECTION】

When the motor is at fault, do not repair it, but replace the whole motor section.

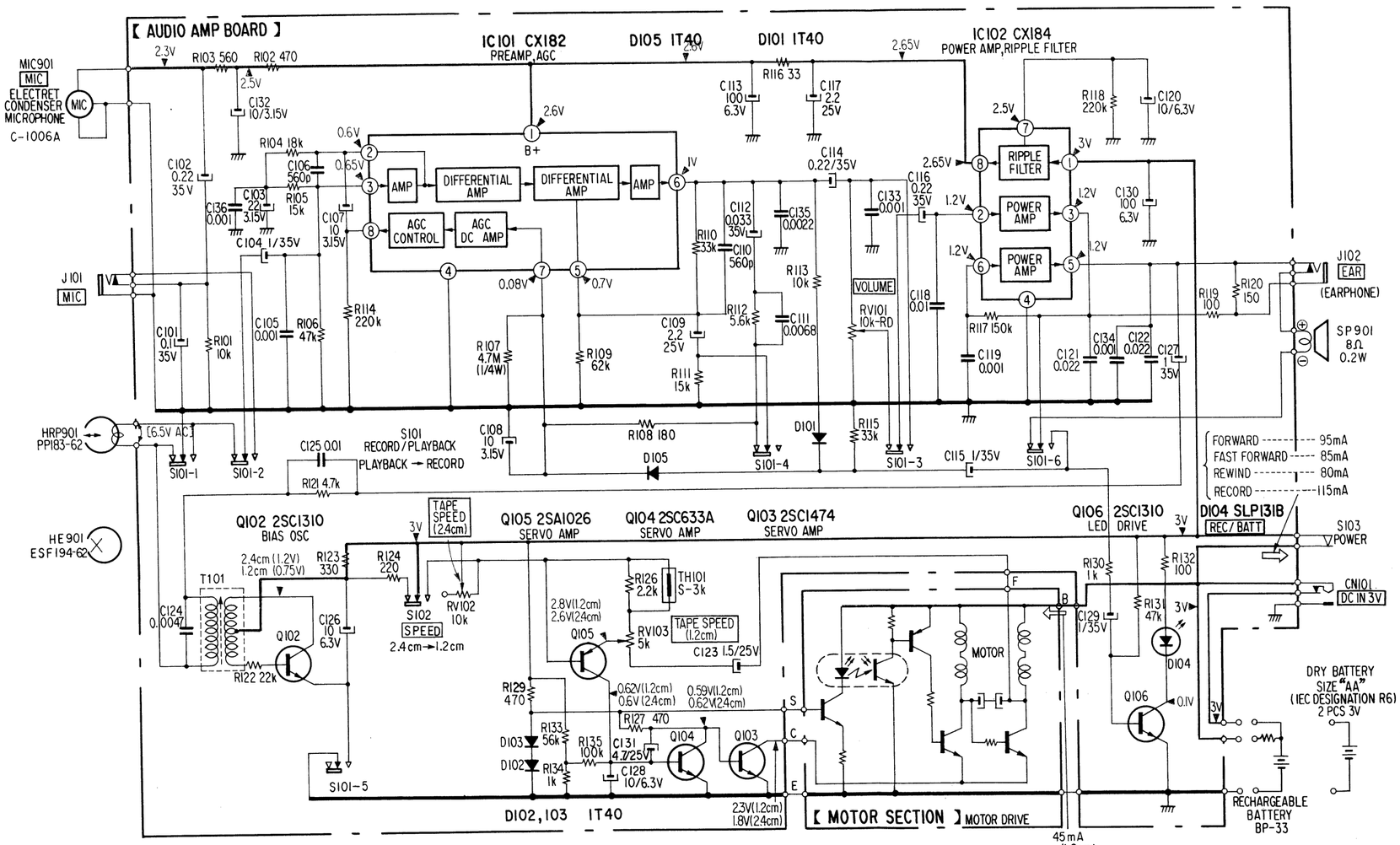
IC102 CX184

S101
RECORD/PLAYBACK
PLAYBACK
↓
RECORD

IC101 CX182

- : B+ pattern.
- —▭—: signal path.
- ( ) : RECORD
  [ ] : RECORD WITH VTVM

4-2. SCHEMATIC DIAGRAM



When the motor is at fault, do not repair it, but replace the whole motor section.

Note:

- All capacitors are in μF unless otherwise noted. pF : μμF 50WV or less are not indicated except for electrolytics.
- All resistors are in ohms, 1/8W unless otherwise noted. kΩ : 1000Ω, MΩ : 1000kΩ
- ——— : B+ bus.
- ▭ : panel designation.
- ▭ : adjustment for repair.
- Voltages are dc with respect to ground unless otherwise noted.
- Readings are taken under no signal conditions with a VOM (20kΩ/V) at 2.4cm/s.
  ( ) : RECORD
  [ ] : RECORD WITH VTVM
- Total current is measured with no cassette installed.
- Switch

Ref. No.	Switch	Position
S101-1 to 101-6	RECORD/PLAYBACK	PLAYBACK
S102	SPEED	2.4cm
S103	POWER	OFF

SECTION 4
EXPLODED VIEWS

DIMENSIONS AND PART NO. OF PRECISION SCREWS

Type	⊕ P (Pan-head screw) d mm	H mm	D mm	⊕ K (Flat-countersunk-head screw) d mm	H mm	D mm
Type 1	1.4	0.5	2	1.4	0.45	2
	1.7	0.5	2.5			
	2	0.6	3			
Type 3	1.4	0.8	2.5			
	1.7	0.9	3			
	2	1	3.5			

Type	Size (mm) (d x L)	Part No.
Type 1	K1.4 x 1.6	7-627-451-07
	P1.4 x 3.5	7-627-551-67
	P1.7 x 2.5	7-627-552-07
	P1.7 x 4	7-627-552-47
	P2 x 4.5	7-627-553-67
Type 3	P1.4 x 1.4	7-627-850-37
	P1.4 x 1.6	7-627-850-47
	P1.4 x 2.5	7-627-850-17
	P1.4 x 4	7-627-850-67
	P1.4 x 5	7-627-851-27

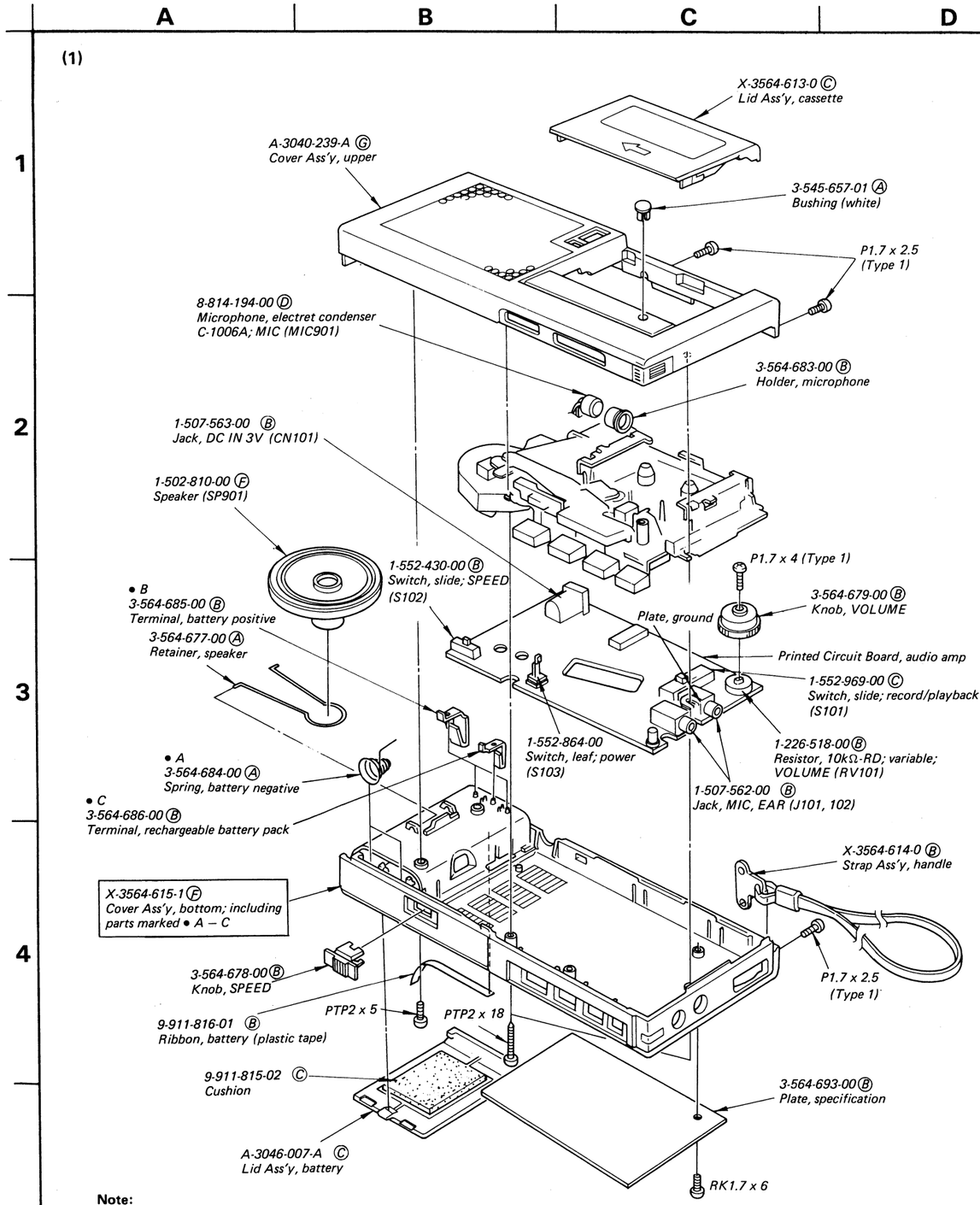
HARDWARE NOMENCLATURE

Screw: P 3 x 10
- L: Length in mm
- D: Diameter in mm
- Type of head
- Indicated slotted-head only. Unless otherwise indicated, it means cross-recessed head (Phillips type).

Nut, Washer, Retaining ring: N 3
- Diameter of usable screw or shaft
- Reference designation

Reference Designation	Shape	Description	Remarks
SCREWS			
P		pan-head screw	binding-head (B) screw for replacement
PWH		pan-head screw with washer face	binding-head (B) screw and flat washer for replacement
PS PSP		pan-head screw with spring washer	binding-head (B) screw and spring washer for replacement
PSW PSPW		pan-head screw with spring and flat washers	binding-head (B) screw and spring and flat washers for replacement
R		round-head screw	binding-head (B) screw for replacement
K		flat-countersunk-head screw	
RK		oval-countersunk-head screw	
B		binding-head screw	
T		truss-head screw	binding-head (B) screw for replacement
F		flat-fillister-head screw	
RF		fillister-head screw	
BV		braizer-head screw	

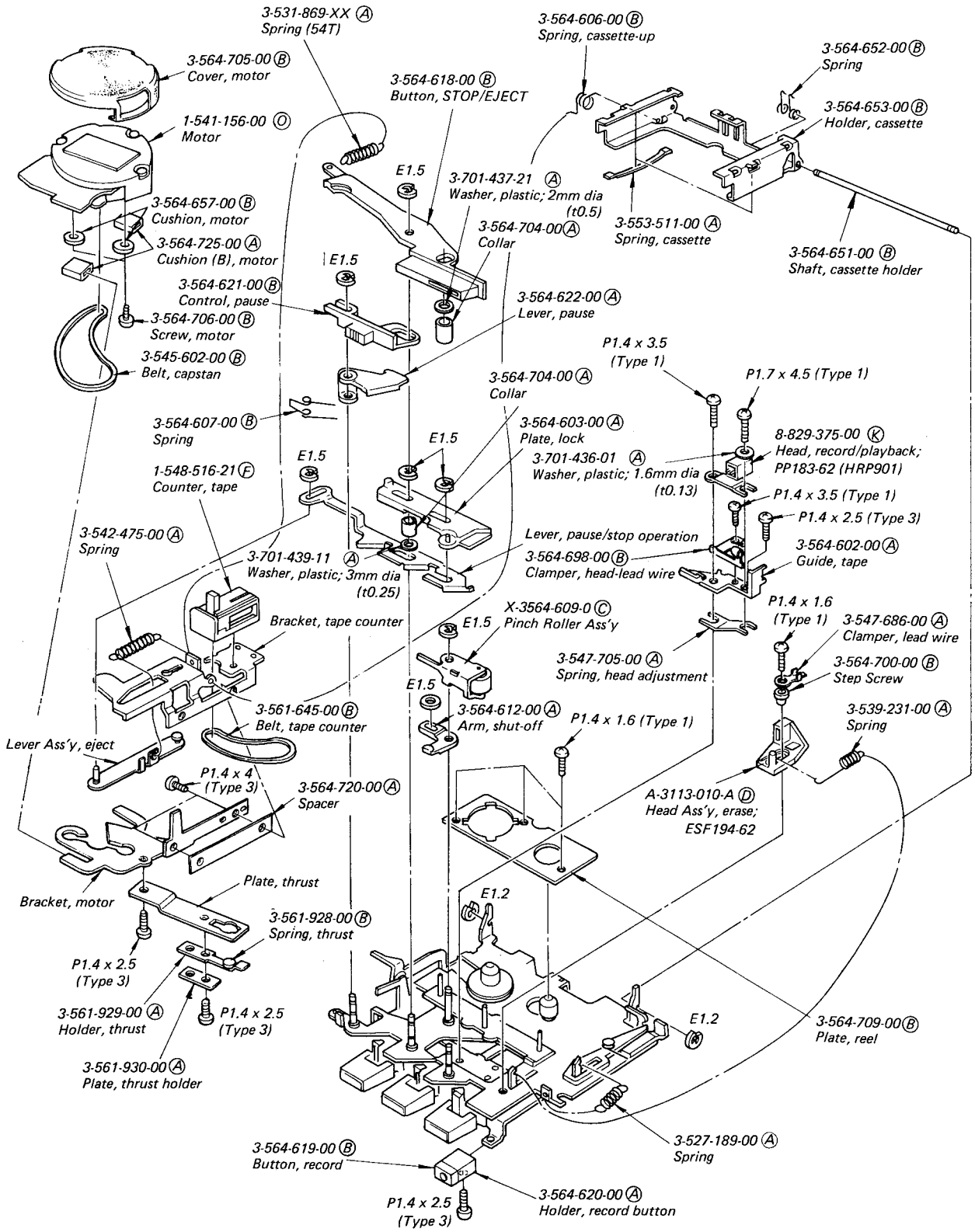
Reference Designation	Shape	Description	Remarks
SELF-TAPPING SCREWS			
TA		self-tapping screw	ex: TA, P 3 x 10
PTP		pan-head self-tapping screw	binding-head self-tapping (TA, B) screw for replacement
PTPWH		pan-head self-tapping screw with washer face	binding-head self tapping (TA, B) screw and flat washer for replacement
PTTWH		pan-head thread-rolling screw with washer face	binding-head (B) screw and flat washer for replacement
SET SCREWS			
SC		set screw	
SC		hexagon-socket set screw	ex: SC 2.6 x 4, hexagon socket
NUT			
N		nut	
WASHERS			
W		flat washer	
SW		spring washer	
LW		internal-tooth lock washer	ex: LW3, internal
LW		external-tooth lock washer	ex: LW3, external
RETAINING RINGS			
E		retaining ring	
G		grip-type retaining ring	



Note:

- Items with no part number and/or no description are not stocked because they are seldom required for routine service.
- All screws are Phillips (cross recess) type unless otherwise noted.
  (–) = slotted head
- Circled letters (Ⓐ to Ⓩ) are applicable to European models only.

(2)

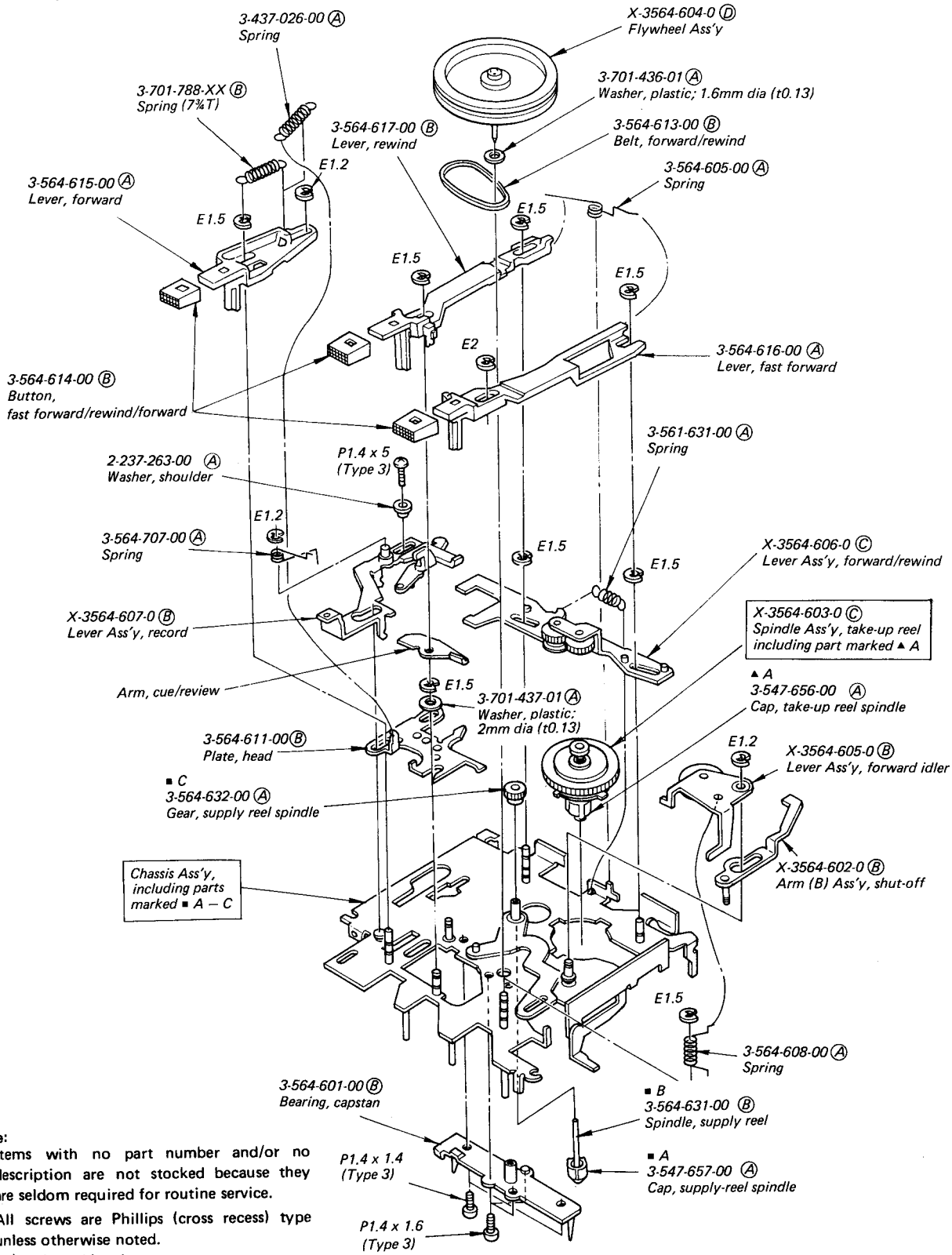


Note:

- Circled letters (Ⓐ to Ⓩ) are applicable to European models only.
- Items with no part number and/or no description are not stocked because they are seldom required for routine service.
- All screws are Phillips (cross recess) type unless otherwise noted.
  (–) = slotted head
- (□□T) shows the number of coils in spring.

(3)

- Circled letters (Ⓐ to Ⓩ) are applicable to European models only.



Note:

- Items with no part number and/or no description are not stocked because they are seldom required for routine service.
- All screws are Phillips (cross recess) type unless otherwise noted.
  (–) = slotted head
- (□□T) shows the number of coils in spring.

SECTION 6
ELECTRICAL PARTS LIST

• Circled letters (Ⓐ to Ⓩ) are applicable to European models only.

Ref. No.	*Part No.*	*Description*
		SEMICONDUCTORS
		Transistors
Q102	8-729-631-02	Ⓑ 2SC1310
Q103	8-760-335-10	Ⓑ 2SC1474
⇒ Q104	8-729-631-02	Ⓑ 2SC1310
⇒ Q105	8-729-612-77	Ⓑ 2SA1027R
Q106	8-729-631-02	Ⓑ 2SC1310
		ICs
IC101	8-751-820-00	Ⓕ CX182
IC102	8-751-840-00	Ⓕ CX184
		Diodes
⇒ D101–103	8-719-815-55	Ⓑ 1S1555
D104	8-719-901-31	Ⓑ SLP131B
⇒ D105	8-719-815-55	Ⓑ 1S1555
TH101	1-800-200-00	Ⓑ Thermistor S-3K
		CAPACITORS

All capacitors are in μF and ceramic unless otherwise noted. 50WV or less are not indicated except for electrolytics and tantalum. p : μμF, elect : electrolytic

C101	1-131-341-00	Ⓑ 0.1	35V	tantalum
C102	1-131-343-00	Ⓑ 0.22	35V	tantalum
C103	1-131-391-00	Ⓑ 22	3.15V	tantalum
C104	1-131-347-00	Ⓑ 1	35V	tantalum
C105	1-101-001-00	Ⓐ 0.001		
C106	1-102-115-00	Ⓐ 560p		
C107, 108	1-131-389-00	Ⓑ 10	3.15V	tantalum
C109	1-131-355-00	Ⓑ 2.2	25V	tantalum
C110	1-102-115-00	Ⓐ 560p		
C111	1-161-049-11	Ⓐ 0.0068		(semiconductor)
C112	1-131-399-00	Ⓑ 0.033	35V	tantalum
C113	1-123-295-00	Ⓑ 100	6.3V	elect
C114	1-131-343-00	Ⓑ 0.22	35V	tantalum
C115	1-131-347-00	Ⓑ 1	35V	tantalum
C116	1-131-343-00	Ⓑ 0.22	35V	tantalum
C117	1-131-355-00	Ⓑ 2.2	25V	tantalum
C118	1-161-379-00	Ⓐ 0.01		
C119	1-161-323-00	Ⓐ 0.001		
C120	1-131-383-00	Ⓑ 10	6.3V	tantalum
C121, 122	1-161-494-00	Ⓑ 0.022		
C123	1-131-354-00	Ⓐ 1.5	25V	tantalum
C124	1-161-047-11	Ⓐ 0.0047		(semiconductor)
C125	1-161-379-00	Ⓐ 0.01		
C126	1-131-383-00	Ⓑ 10	6.3V	tantalum
C127	1-131-347-00	Ⓑ 1	35V	tantalum
C128	1-131-383-00	Ⓑ 10	6.3V	tantalum
C129	1-131-347-00	Ⓑ 1	35V	tantalum
C130	1-123-295-00	Ⓑ 100	6.3V	elect
C131	1-123-328-00	Ⓑ 4.7	25V	elect
C132	1-131-389-00	Ⓑ 10	3.15V	tantalum
C133, 134	1-102-074-00	Ⓐ 0.001		
C135	1-161-017-00	Ⓐ 0.0022		(semiconductor)
C136	1-102-074-00	Ⓐ 0.001		
		RESISTORS		

All resistors are in ohms and carbon unless otherwise noted.

R101	1-246-795-00	Ⓐ 10k	1/8W	
R102	1-246-779-00	Ⓐ 470	1/8W	
R103	1-246-780-00	Ⓐ 560	1/8W	
R104	1-246-798-00	Ⓐ 18k	1/8W	
R105	1-246-797-00	Ⓐ 15k	1/8W	
R106	1-246-803-00	Ⓐ 47k	1/8W	
R107	1-202-471-21	Ⓐ 4.7M	¼W	composition
R108	1-246-774-00	Ⓐ 180	1/8W	
R109	1-246-865-00	Ⓐ 62k	1/8W	
R110	1-246-801-00	Ⓐ 33k	1/8W	
R111	1-246-797-00	Ⓐ 15k	1/8W	
R112	1-246-792-00	Ⓐ 5.6k	1/8W	
R113	1-246-795-00	Ⓐ 10k	1/8W	
R114	1-246-811-00	Ⓐ 220k	1/8W	
R115	1-246-801-00	Ⓐ 33k	1/8W	
R116	1-246-765-00	Ⓐ 33	1/8W	
R117	1-246-809-00	Ⓐ 150k	1/8W	
R118	1-246-811-00	Ⓐ 220k	1/8W	
R119	1-246-771-00	Ⓐ 100	1/8W	
R120	1-246-773-00	Ⓐ 150	1/8W	
R121	1-246-791-00	Ⓐ 4.7k	1/8W	

• ⇒: Due to standardization, interchangeable replacements may be substituted for parts specified in the diagrams.

M-203

• Circled letters (Ⓐ to Ⓩ) are applicable to European models only.

Ref. No.	*Part No.*	*Description*	
R122	1-246-799-00	Ⓐ 22k	1/8W
R123	1-246-777-00	Ⓐ 330	1/8W
R124	1-246-775-00	Ⓐ 220	1/8W
R125, 126	1-246-787-00	Ⓐ 2.2k	1/8W
R127	1-246-779-00	Ⓐ 470	1/8W
R129	1-246-779-00	Ⓐ 470	1/8W
R130	1-246-783-00	Ⓐ 1k	1/8W
R131	1-246-803-00	Ⓐ 47k	1/8W
R132	1-246-771-00	Ⓐ 100	1/8W
R133	1-246-804-00	Ⓐ 56k	1/8W
R134	1-246-783-00	Ⓐ 1k	1/8W
R135	1-246-807-00	Ⓐ 100k	1/8W
RV101	1-226-518-00	Ⓑ 10k-RD, variable; VOLUME	
RV102	1-226-529-00	Ⓑ 10k-B, adjustable; tape speed 2.4cm	
RV103	1-226-528-00	Ⓑ 5k-B, adjustable; tape speed 1.2cm	

SWITCHES

S101	1-552-969-00	Ⓒ Slide, record/playback
S102	1-552-430-00	Ⓑ Slide, SPEED
S103	1-552-864-00	Ⓑ Leaf, power

MISCELLANEOUS

CN101	1-507-563-00	Ⓑ Jack, DC IN 3V
HE901	A-3113-010-A	Ⓓ Head Ass'y, erase; ESF194-62
HRP901	8-829-375-00	Ⓚ Head, record/playback; PP183-62
J101, 102	1-507-562-00	Ⓑ Jack, MIC, EAR
MIC901	8-814-194-00	Ⓓ Microphone, electret condenser
SP901	1-502-810-00	Ⓕ Speaker
T101	1-433-207-00	Ⓑ Transformer, OSC
	1-541-156-00	Ⓞ Motor

ACCESSORIES & PACKING MATERIALS

Part No.	*Description*
X-3701-105-0	Ⓐ Tip Ass'y, head cleaning
1-504-075-00	Ⓑ Earphone
1-506-309-00	Plug, shorting; SP-100 (US, Canadian model)
1-528-027-11	Battery, dry; SIZE "AA" (US, Canadian, E model)
3-564-694-00	Ⓑ Bag, protection
3-564-714-00	Ⓑ Carton
3-564-731-00	Ⓔ Case, carrying
3-701-620-00	Ⓐ Bag, plastic
3-701-624-00	Ⓐ Bag, plastic (US, Canadian, UK model)
3-770-797-11	Ⓑ Manual, instruction (AEP, UK, Canadian, E model)
3-770-797-21	Manual, instruction (US model)
3-794-006-21	Ⓑ Card, micro cassette recorder caution
3-794-233-21	Ⓐ Leaflet (US model)
8-891-113-00	Ⓖ Tape, micro cassette; MC-60 (J) (UK, Canadian model)
8-891-117-00	Ⓖ Tape, micro cassette; MC-60 (E) (US, AEP, E model)

9-954-744-11

Sony Corporation

© 1979

79E04114-1
Printed in Japan

MICRO CASSETTE-CORDER
MICRO MAGNETO-CASSETTE

M-203

AEP Model
Serial No. 41801 and later

UK Model
Serial No. 29301 and later

E Model
Serial No. 43801 and later

US Model
Serial No. 49426 and later

Canadian Model
Serial No. 26801 and later

Modèle AEP
A partir du numéro de série 41801

Modèle UK
A partir du numéro de série 29301

Modèle E
A partir du numéro de série 43801

Modèle US
A partir du numéro de série 49426

Modèle Canadien
A partir du numéro de série 26801

No. 1
August, 1980

N° 1
Août, 1980

SUPPLEMENT

This supplement updates the service manual to include production changes.

File this supplement with the service manual.

Subject: Changes of Circuit and Circuit Board

Ce supplément met à jour le manuel de service en incluant les changements de production.

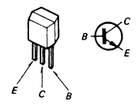
Classer ce supplément avec le manuel de service.

Sujet: Modification du circuit et de la plaquette circuit

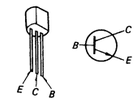
SONY®
SERVICE MANUAL
MANUEL DE SERVICE

SEMICONDUCTOR LEAD LAYOUT
SEMICONDUCTEURS

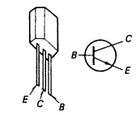
2SC1310



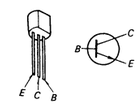
2SC1474



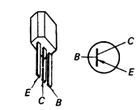
2SC633A



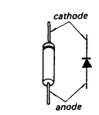
2SC1364



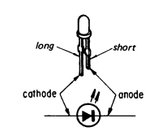
2SA1026 2SA1027R



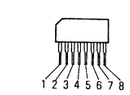
1T40 1S1555



SLP131B



CX182
CX184



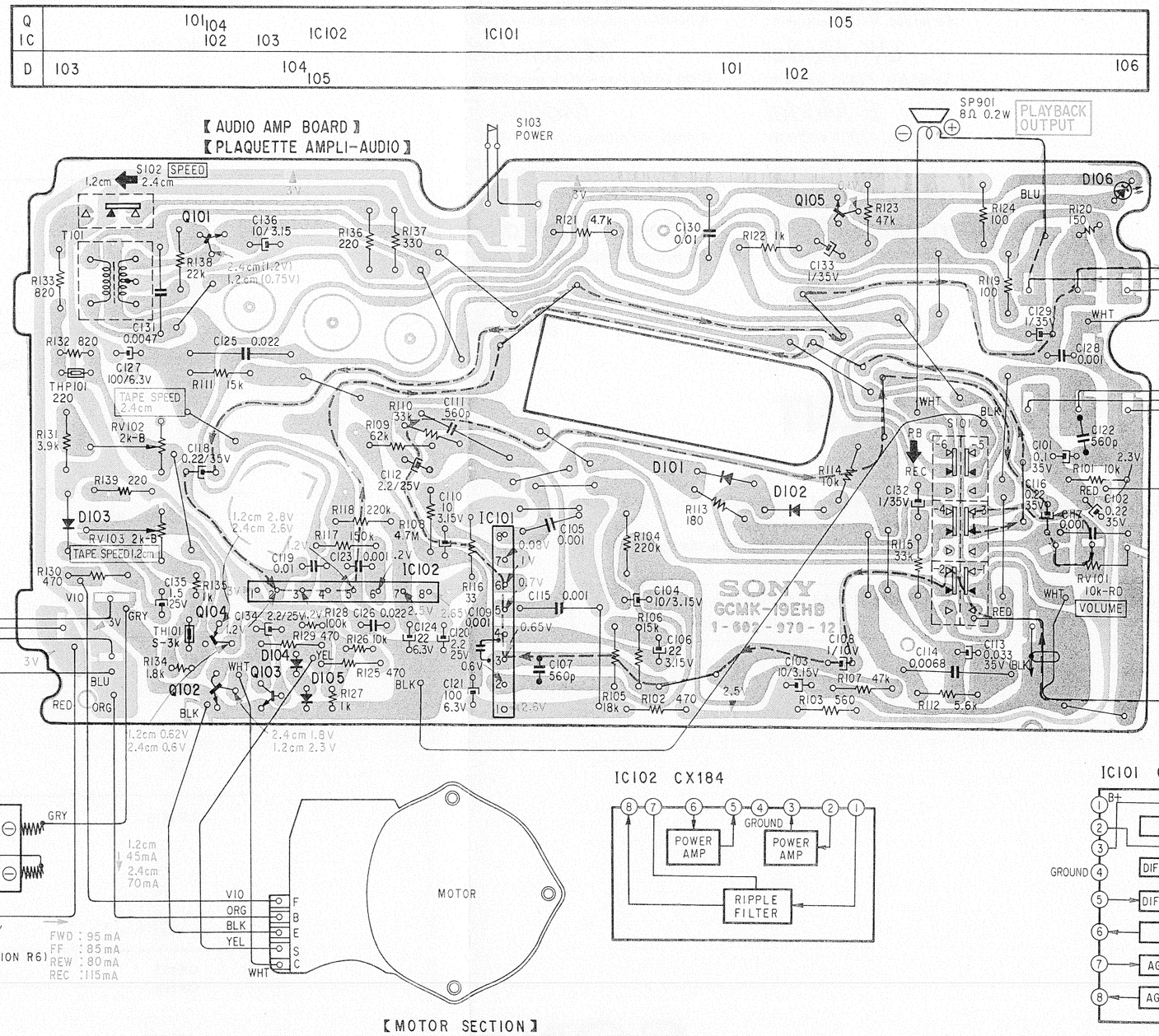
AEP Model
Serial No. 41801 and later
UK Model
Serial No. 29301 and later
E Model
Serial No. 43801 and later

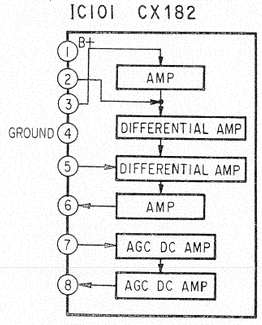
US Model
Serial No. 49426 and later
Canadian Model
Serial No. 26801 and later

Modèle AEP
A partir du numéro de série 41801
Modèle UK
A partir du numéro de série 29301
Modèle E
A partir du numéro de série 43801

Modèle US
A partir du numéro de série 49426
Modèle Canadien
A partir du numéro de série 26801

MOUNTING DIAGRAM
– Conductor Side –
DIAGRAMME DE MONTAGE
– Côté Conducteur –





Note:
- ▒▒ : B+ pattern.
- ⟹ : signal path.
- ( ) : RECORD
  [ ] : RECORD WITH VTVM
- ▒▒ : diagramme B+
- ⟹ : parcours de signal
- ( ) : enr.
  [ ] : enr. avec le voltmètre électronique

MOTOR SECTION

When the motor does not operate properly, do not repair it, but replace the whole motor section.

PARTIE MOTEUR

Lorsque le moteur est en panne, ne pas le dépanner, mais le remplacer entièrement.

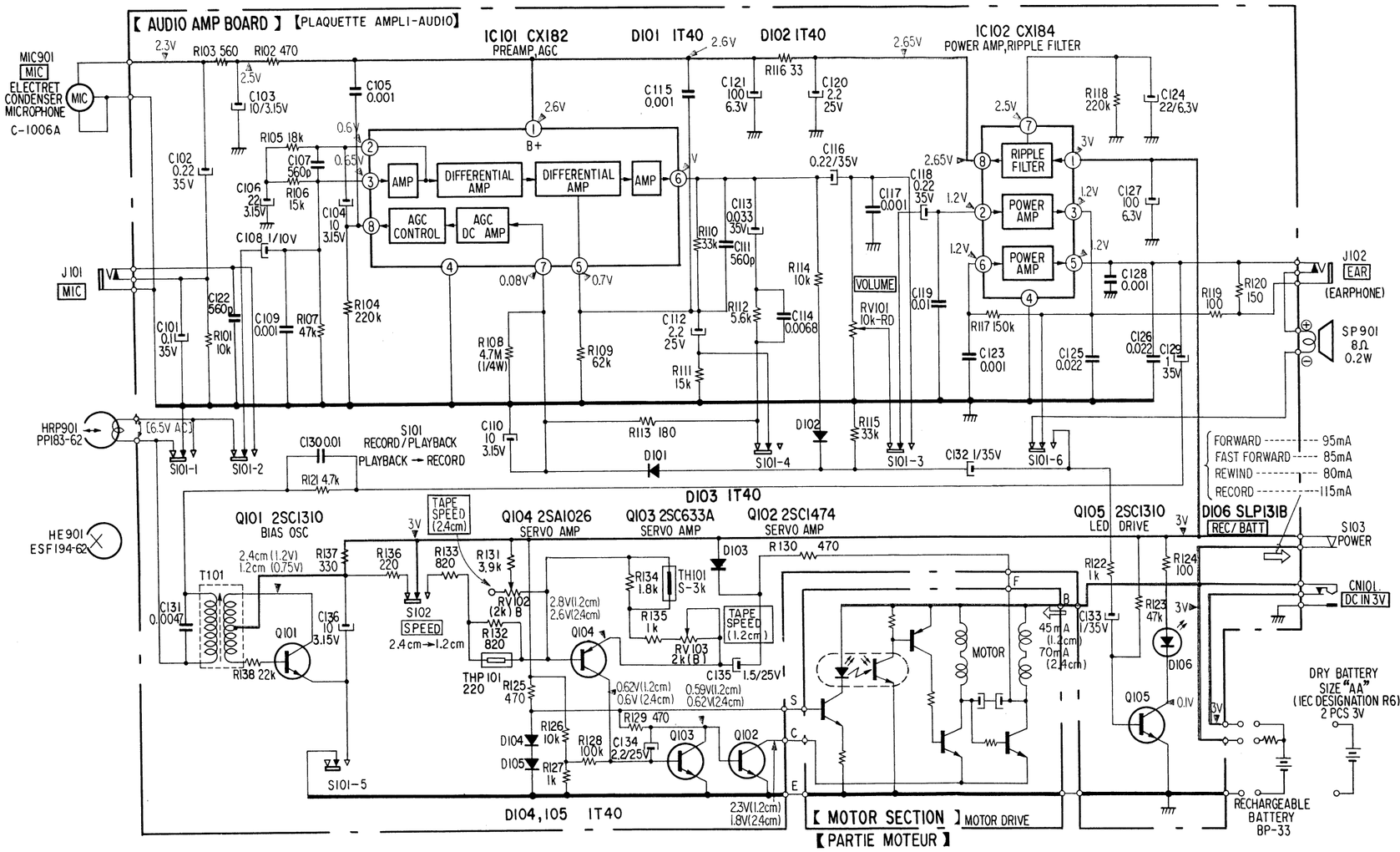
AEP Model
Serial No. 41801 and later
UK Model
Serial No. 29301 and later
E Model
Serial No. 43801 and later

US Model
Serial No. 49426 and later
Canadian Model
Serial No. 26801 and later

Modèle AEP
A partir du numéro de série 41801
Modèle UK
A partir du numéro de série 29301
Modèle E
A partir du numéro de série 43801

Modèle US
A partir du numéro de série 49426
Modèle Canadien
A partir du numéro de série 26801

SCHEMATIC DIAGRAM
DIAGRAMME SCHEMATIQUE



When the motor does not operate properly, do not repair it, but replace the whole motor section.

Lorsque le moteur est en panne, ne pas le dépanner, mais le remplacer entièrement.

Note:

- All capacitors are in μF unless otherwise noted. pF : μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in ohms, ⅛W unless otherwise noted. kΩ : 1000 Ω, MΩ : 1000 kΩ
- ▬▬ : B+ bus.
- ▭ : panel designation.
- ▭ : adjustment for repair.
- Voltages are dc with respect to ground unless otherwise noted.
- Readings are taken under no signal conditions with a VOM (20kΩ/V) at 2.4cm/s.
  ( ) : RECORD
  [ ] : RECORD WITH VTVM
- Total current is measured with no cassette installed.
- Switch

Ref. No.	Switch	Position
S101-1 to 101-6	RECORD/PLAYBACK	PLAYBACK
S102	SPEED	2.4cm
S103	POWER	OFF

Note:

- Toutes les capacités sont en μF sauf indication contraire pF : μμF
  Les tensions de fonctionnement de 50 WV ou inférieures ne sont pas indiquées, sauf pour les capacités électrolytiques.
- Toutes les résistances sont en Ω, 1/8W, sauf indication contraire
  kΩ : 1000Ω; MΩ : 1000kΩ
- ▬▬ : parcours de B +
- ▭ : désignation lisible à l'extérieur de l'appareil
- ▭ : réglage pour un dépannage
- Les tensions sont des tensions continues par rapport à la masse, sauf indication contraire.
- Les mesures sont prises sans signal et ce avec un contrôleur (20kΩ/V) à 2,4cm/s.
  ( ) : enr.
  [ ] : enr. avec le voltmètre électronique
- Le courant total est mesuré sans cassette.
- Interrupteurs/sélecteurs

N° de réf	Interrupteur/Sélecteur	Position
S101-1 à 101-6	enr./lecture (RECORD/PLAYBACK)	lecture (PLAYBACK)
S102	vitesse (SPEED)	2,4cm
S103	alimentation (POWER)	hors-circuit

AEP Model
Serial No. 41801 and later
UK Model
Serial No. 29301 and later
E Model
Serial No. 43801 and later
US Model
Serial No. 49426 and later
Canadian Model
Serial No. 26801 and later

Modèle AEP
A partir du numéro de série 41801
Modèle UK
A partir du numéro de série 29301
Modèle E
A partir du numéro de série 43801
Modèle US
A partir du numéro de série 49426
Modèle Canadien
A partir du numéro de série 26801

9-954-744-81

Sony Corporation
© 1980

80H04120-1
Printed in Japan